

The Economics of Sea Level Rise: Forecasting Flood Damage Cost

Angela Schedel, Taylor Engineering



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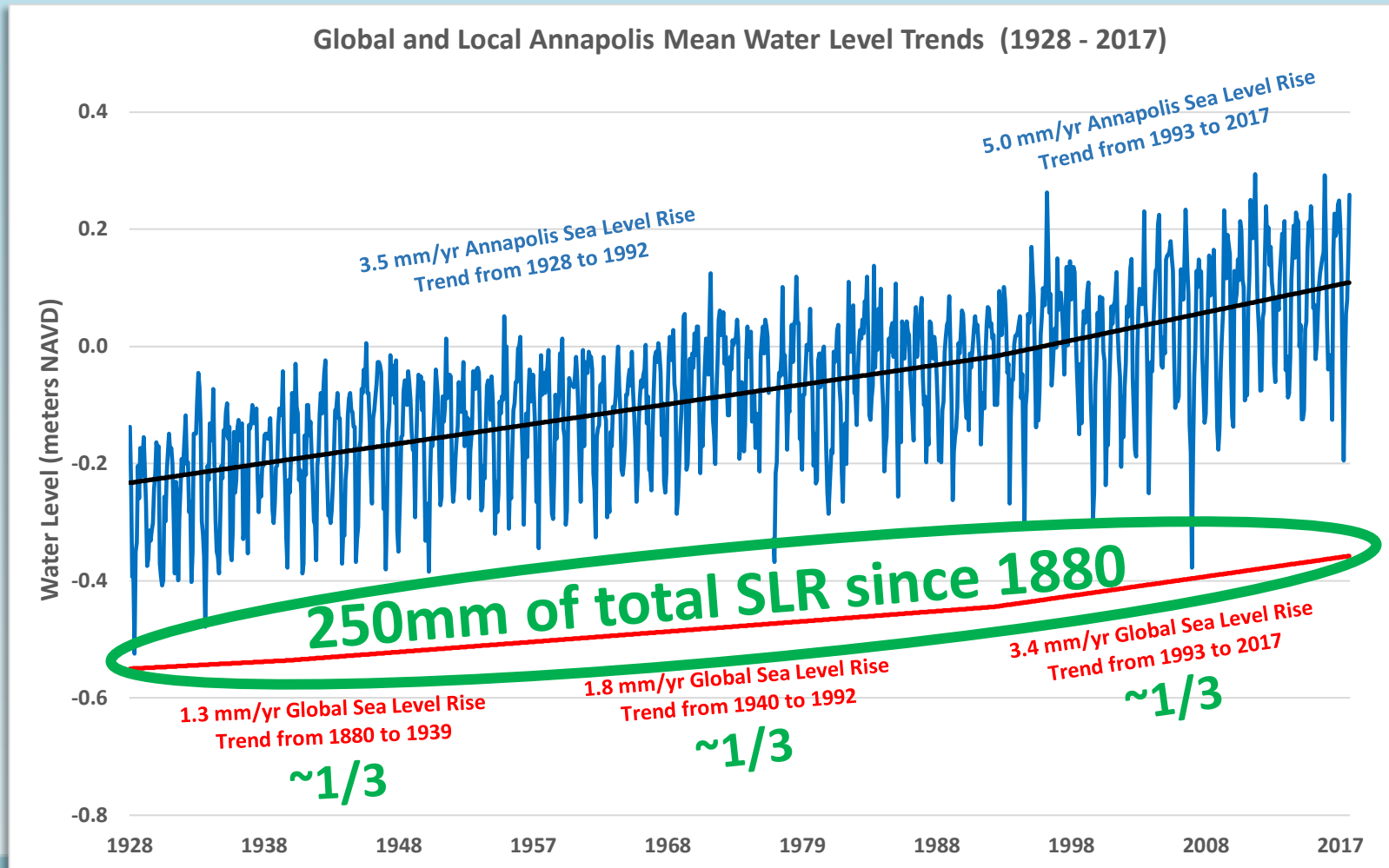
The Roadmap

- What is the sea level rise trend?
- What is the sea level forecast?
- How to translate SLR into cost?
- What to do with this info?



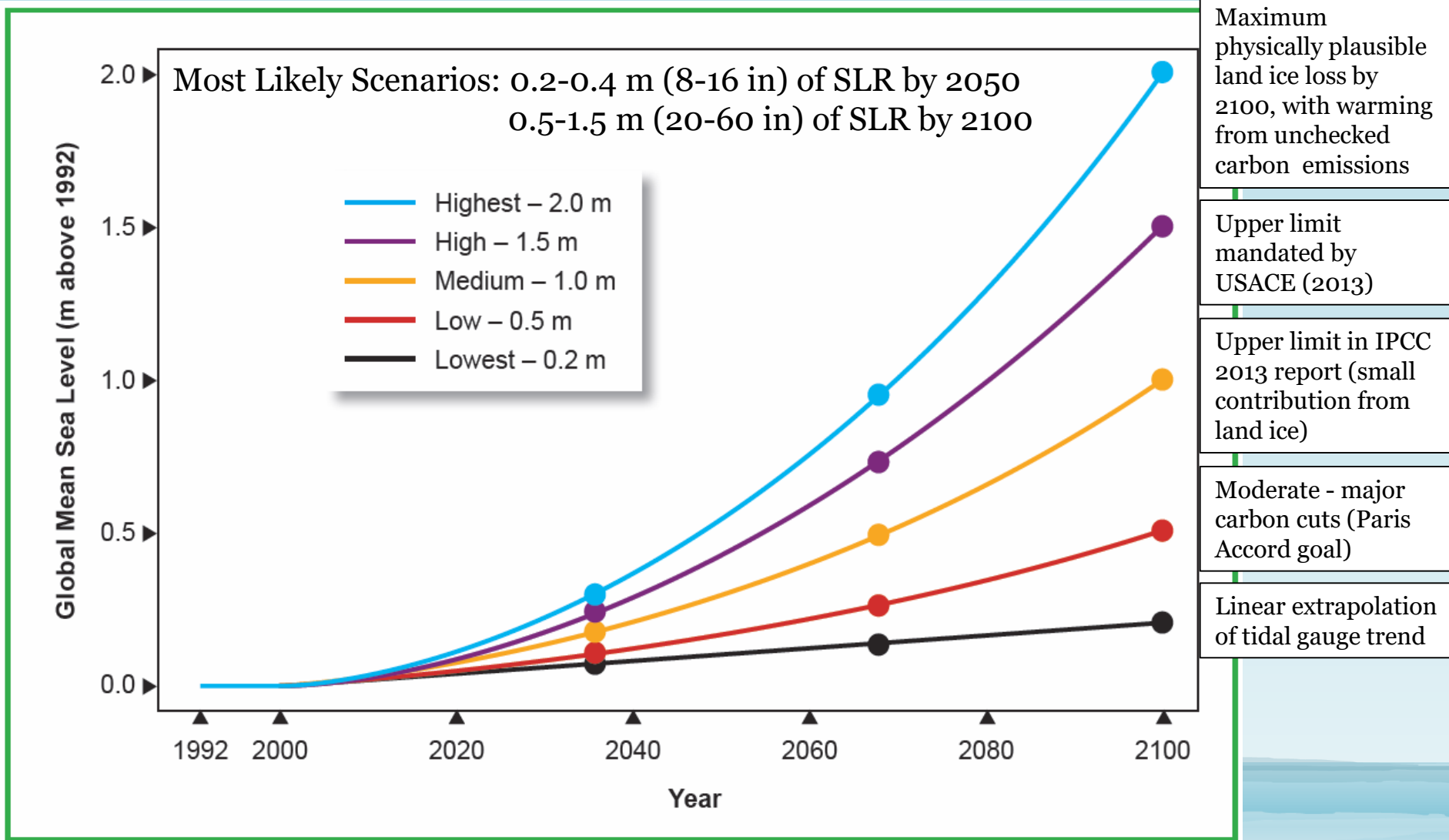
Source: USA Today

What is the Sea Level Rise Trend?



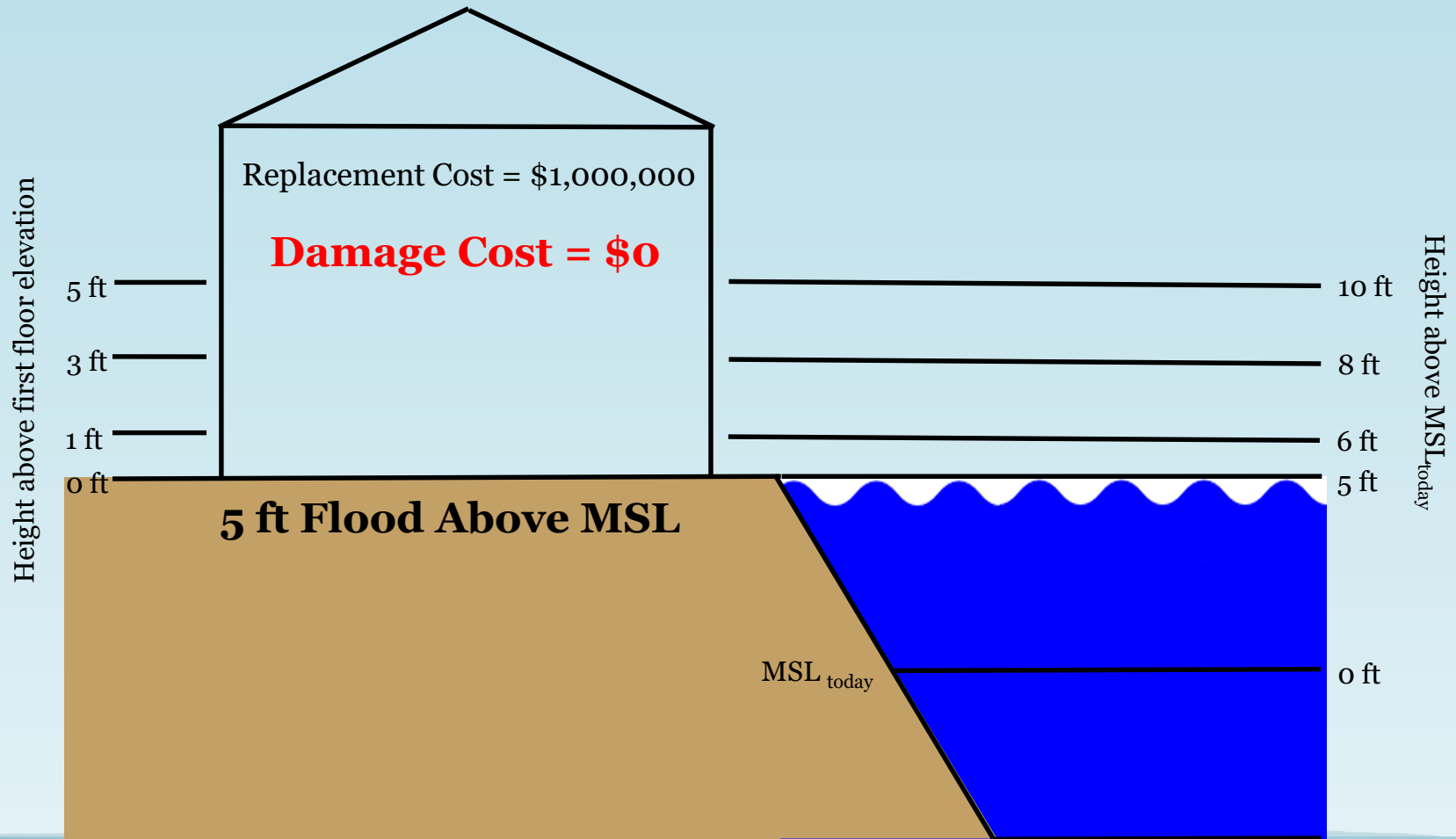
Sources: Adapted from National Climate Assessment (2014), Church & White (2011), NOAA tidesandcurrents.noaa.gov

What is the Sea Level Rise Forecast?

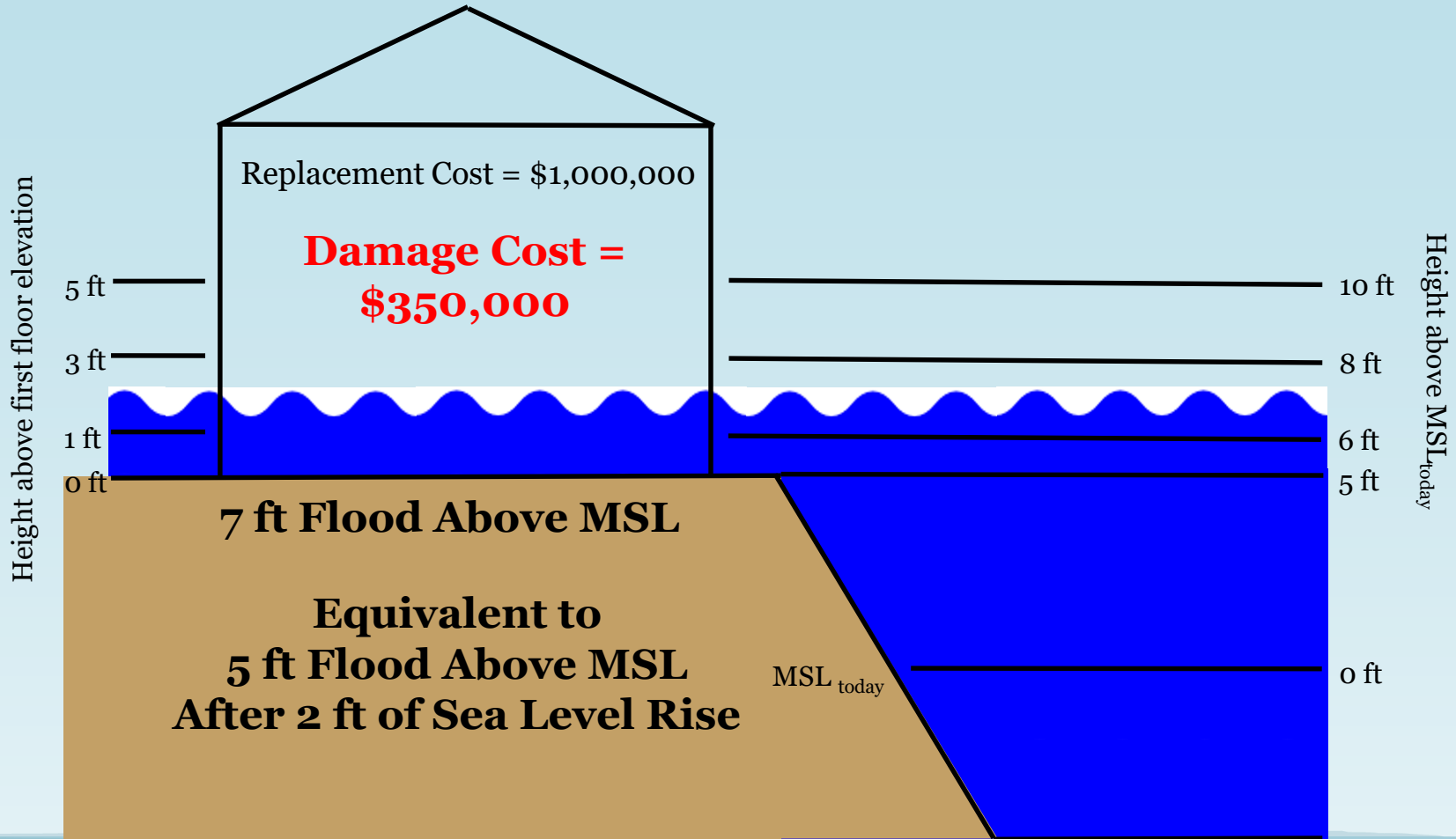


Source: Adapted from Hall et al (2016)

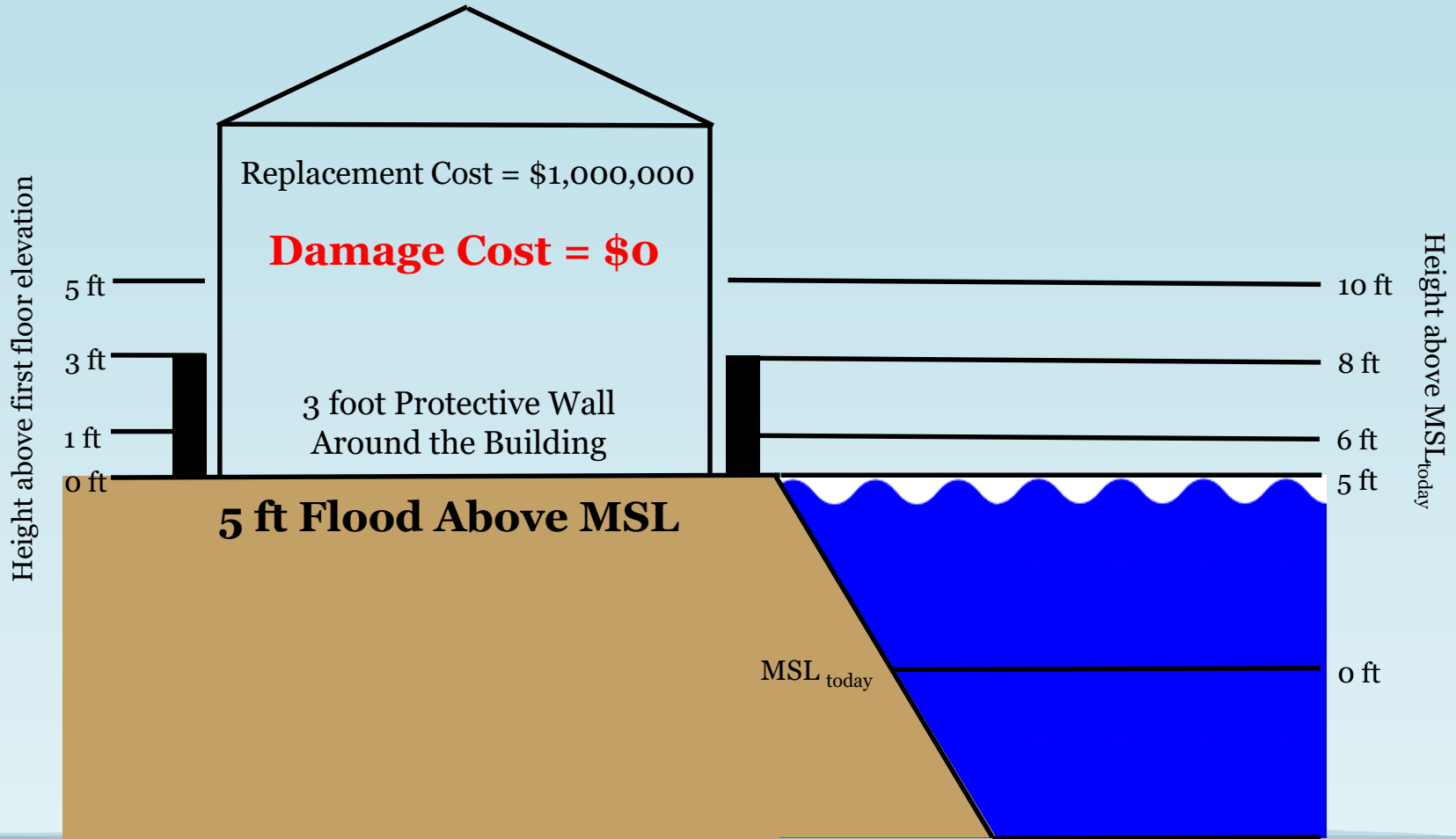
How to Translate SLR into Cost?



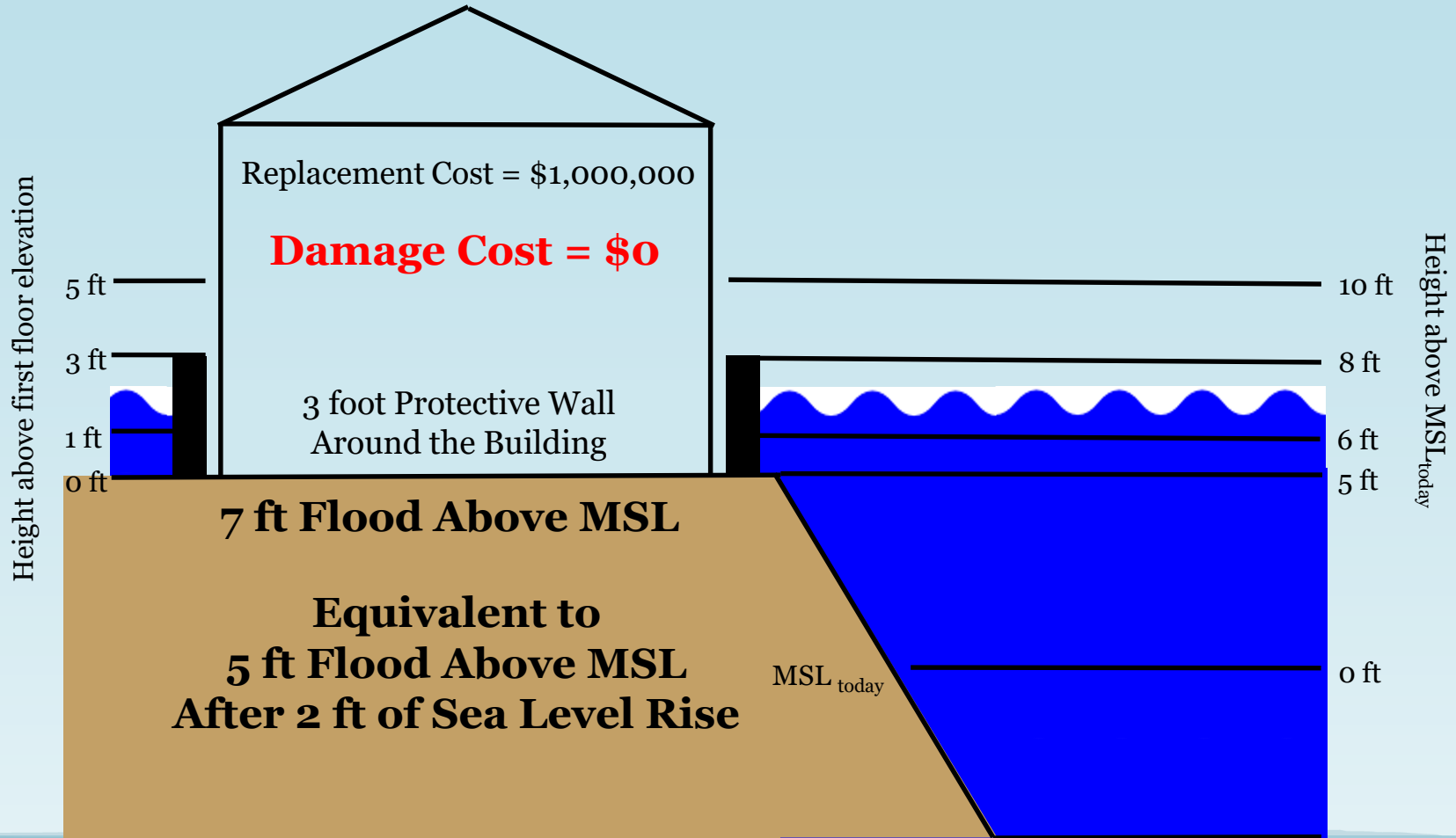
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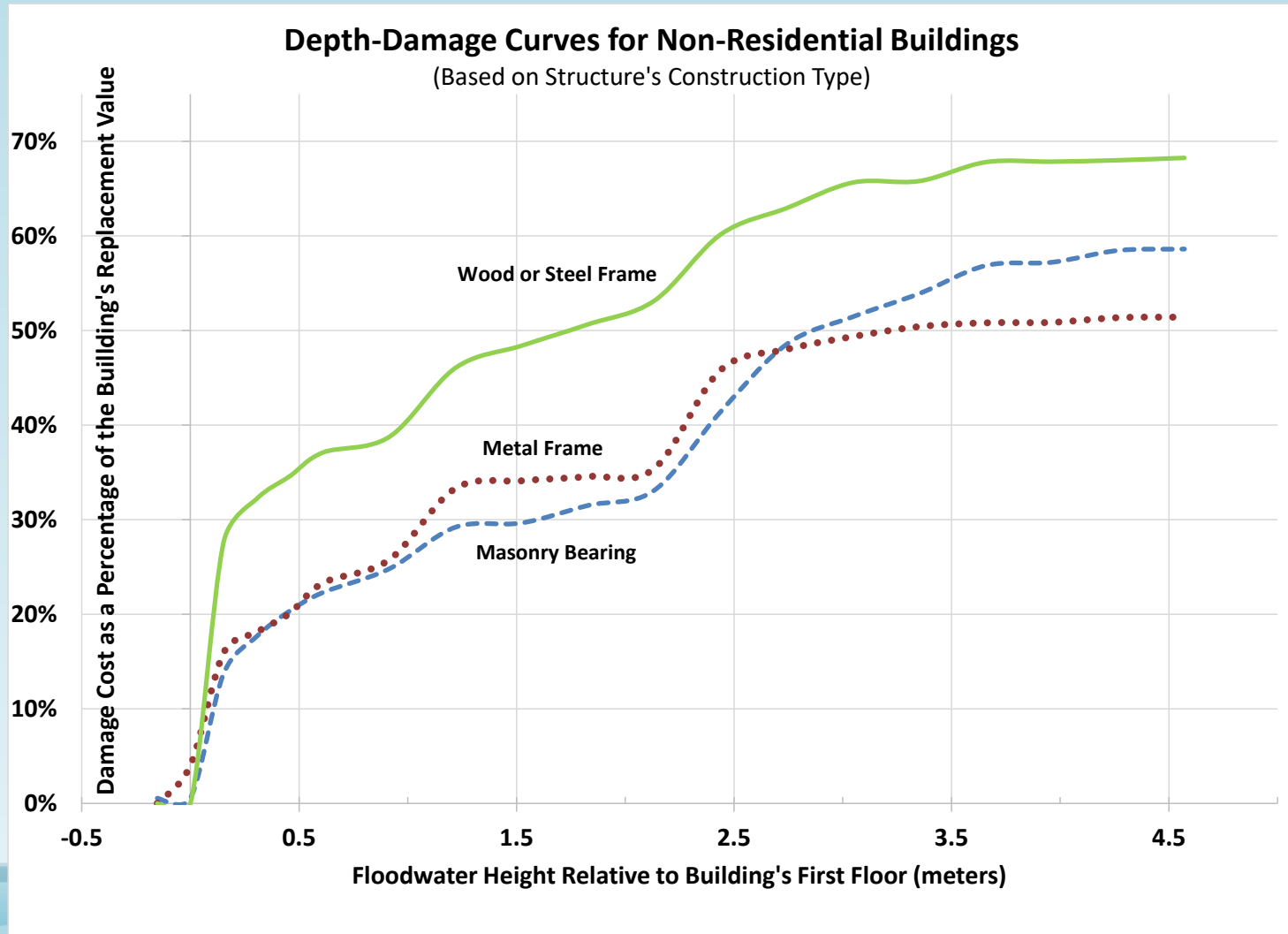
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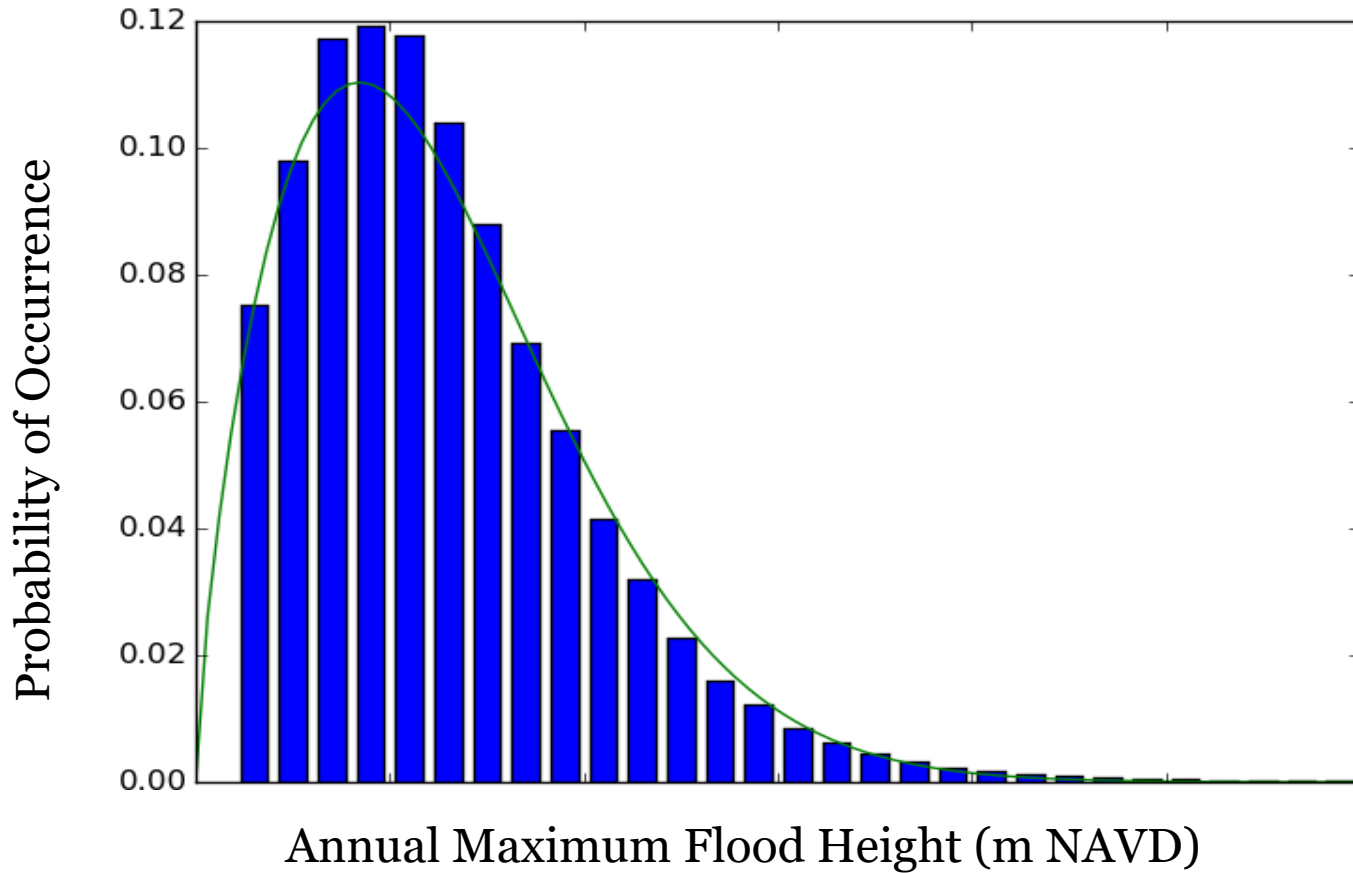


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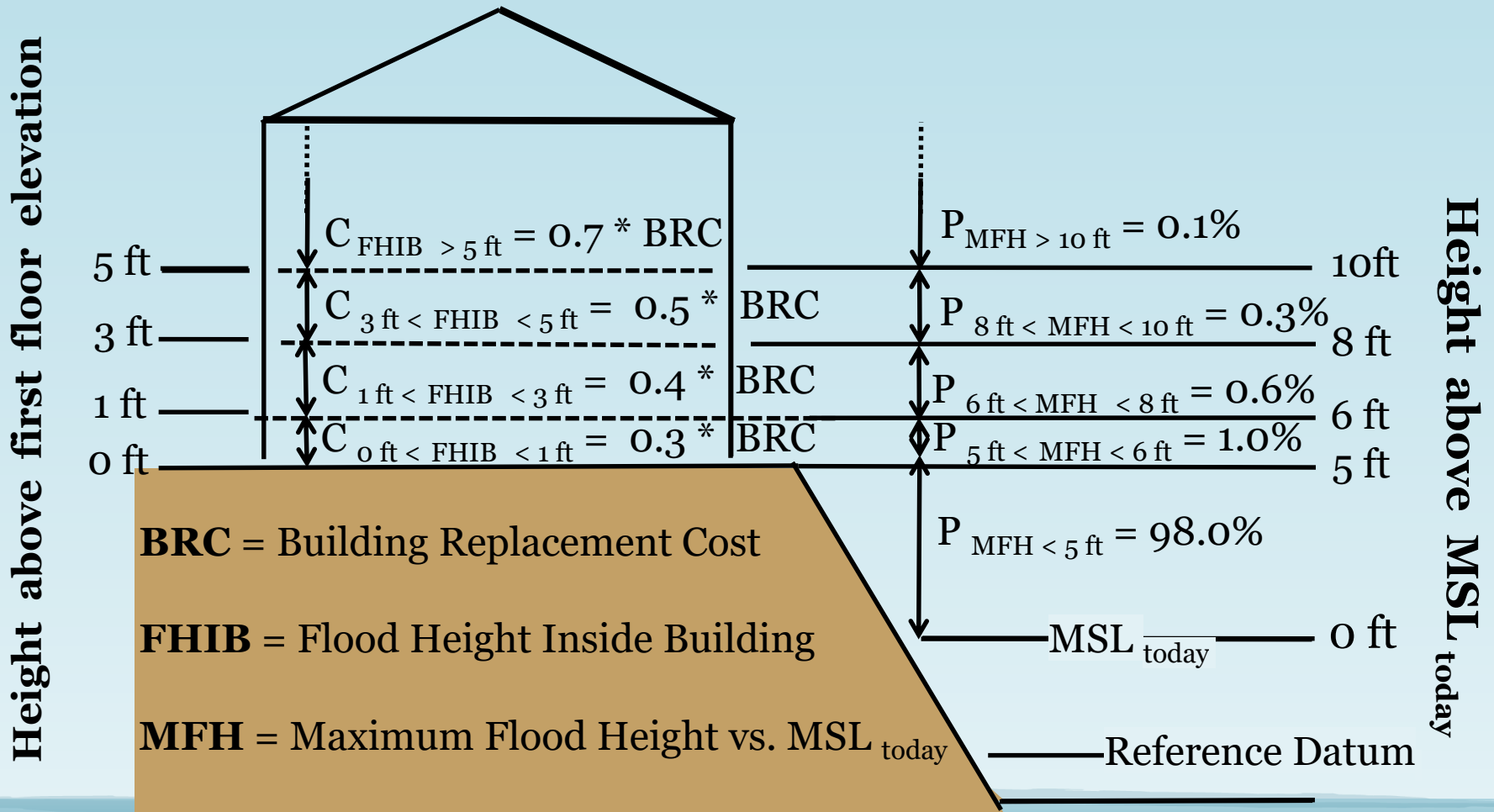


Source: Adapted from U.S. Army Corps of Engineers (2006)

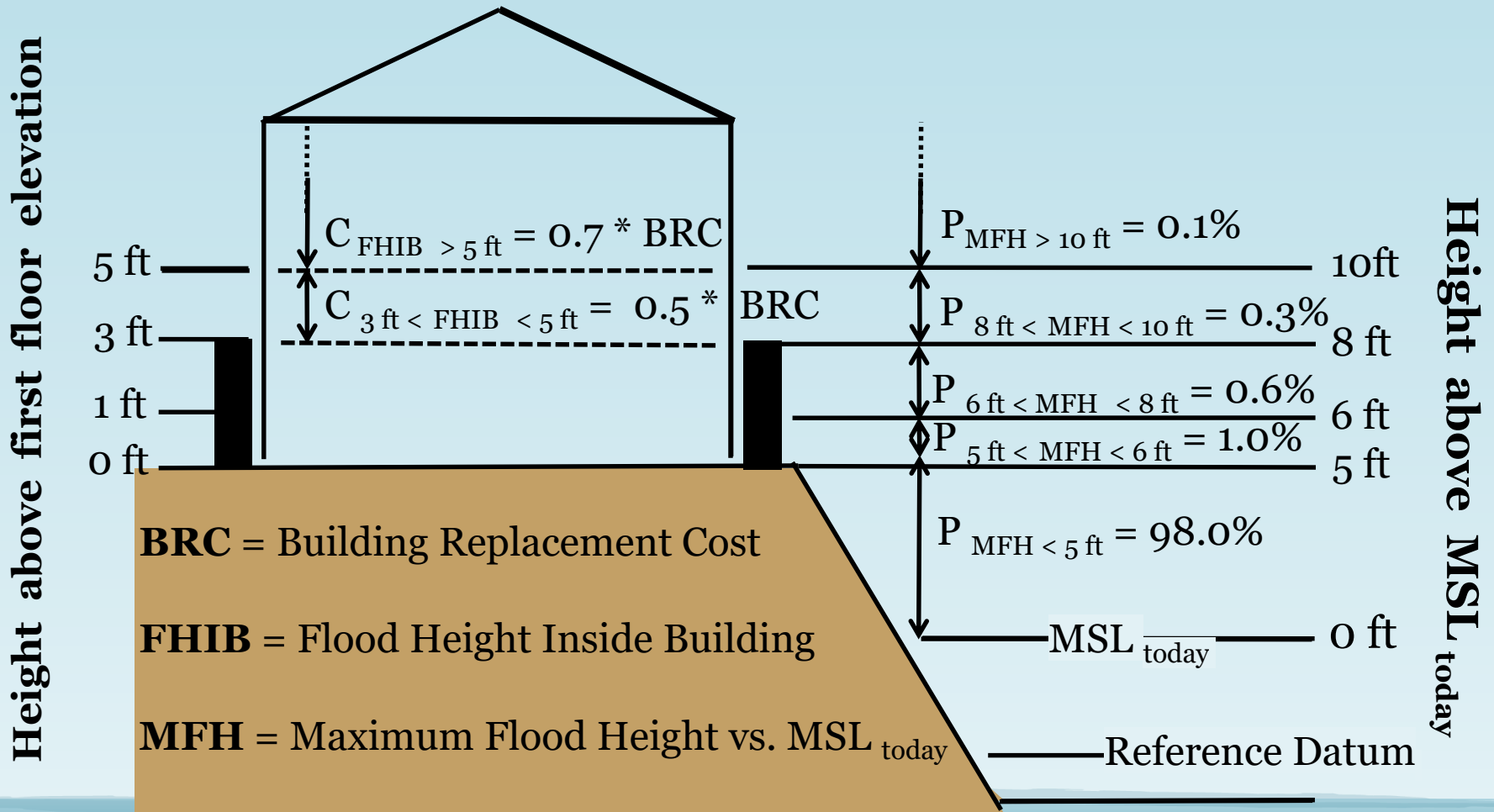
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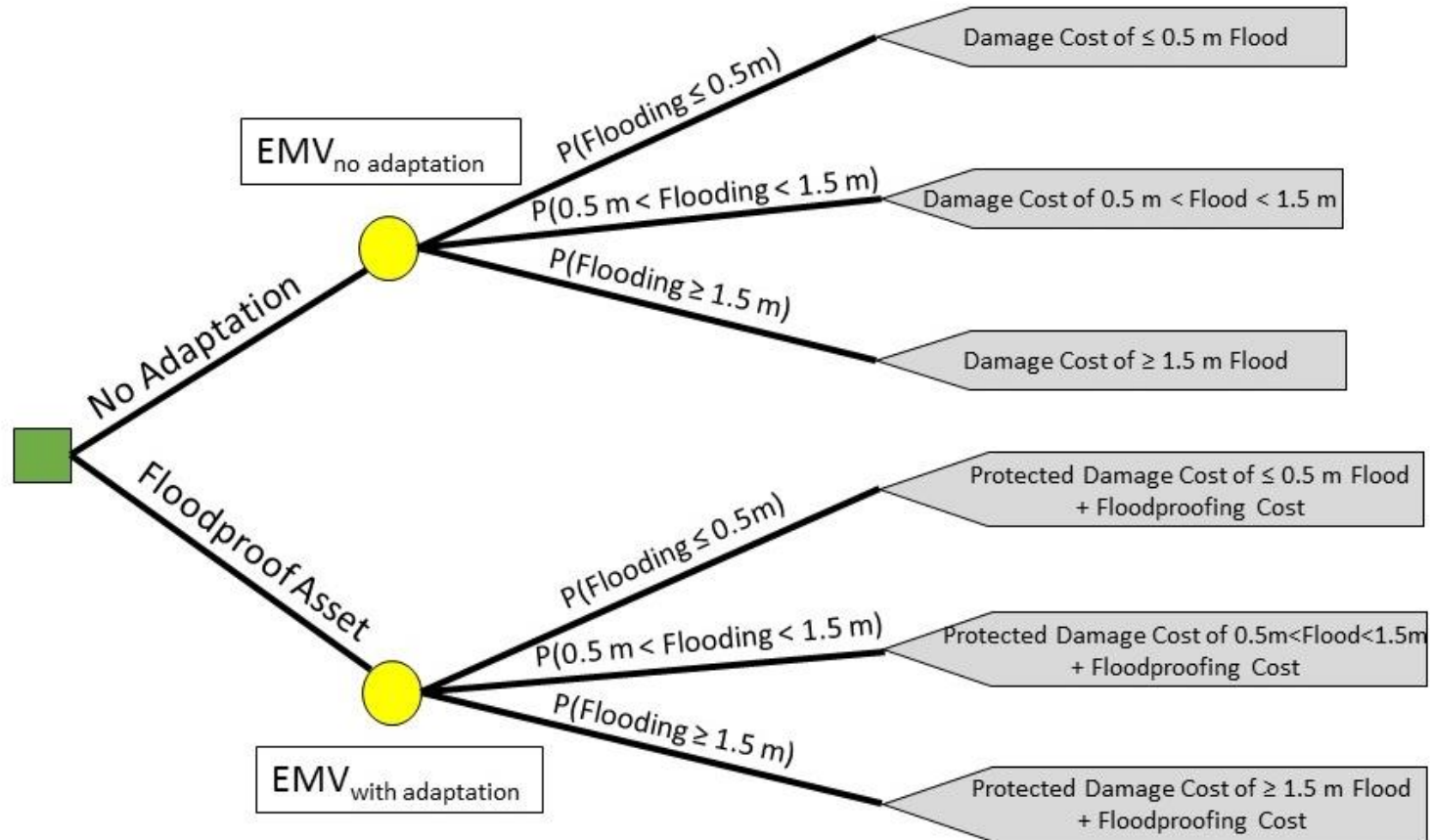


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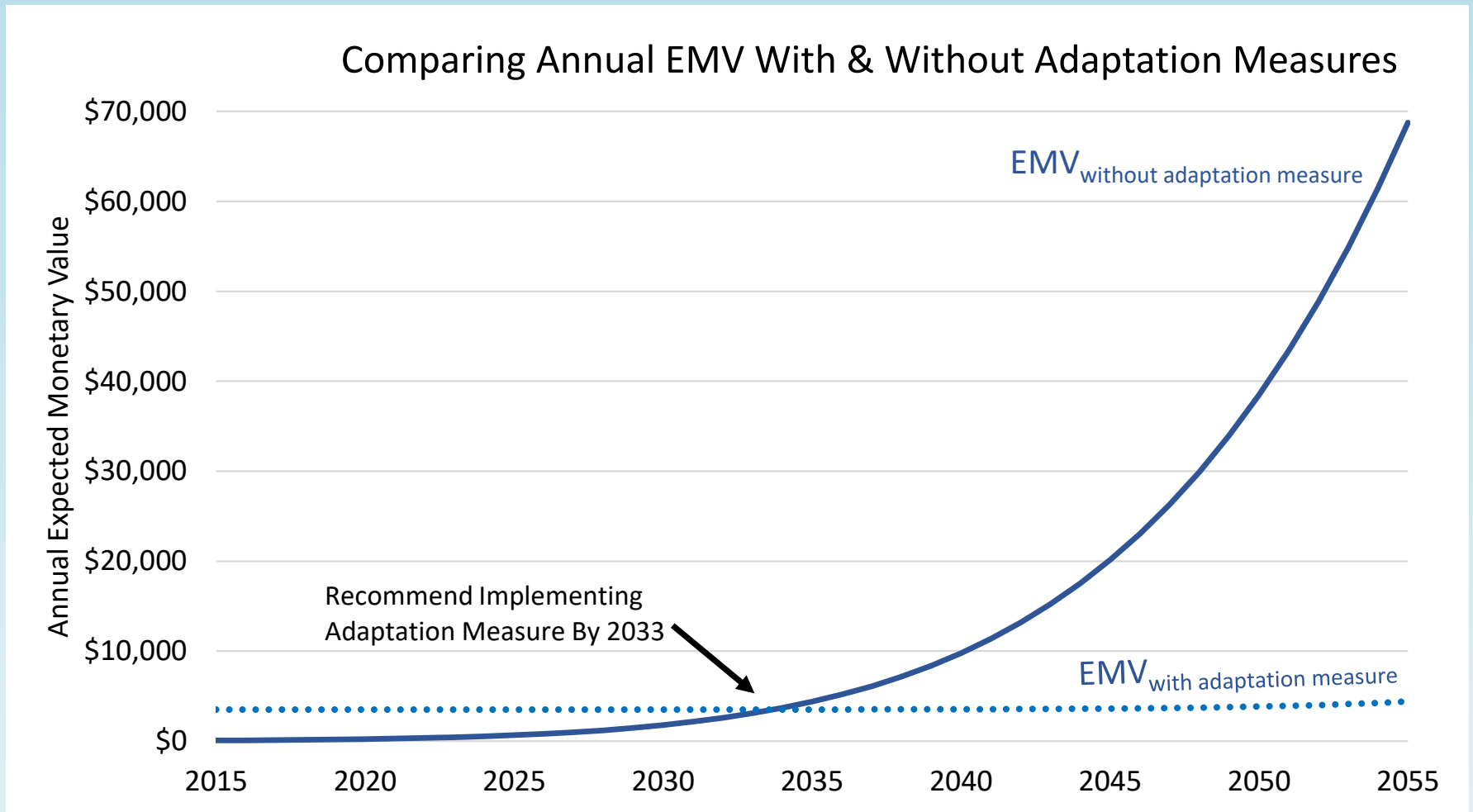


WITH 3 FOOT PROTECTIVE WALL AROUND BUILDING

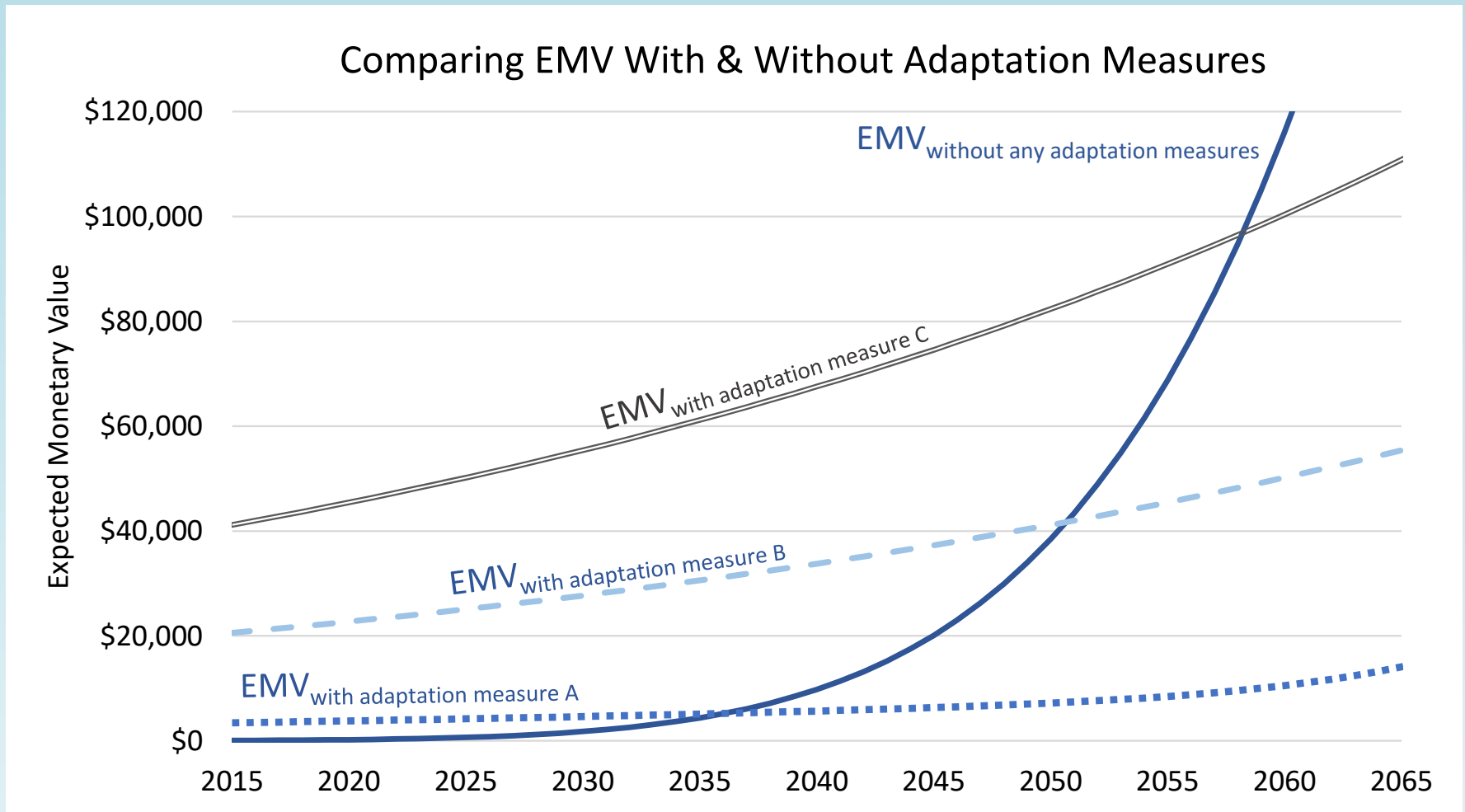
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What to do with this info?

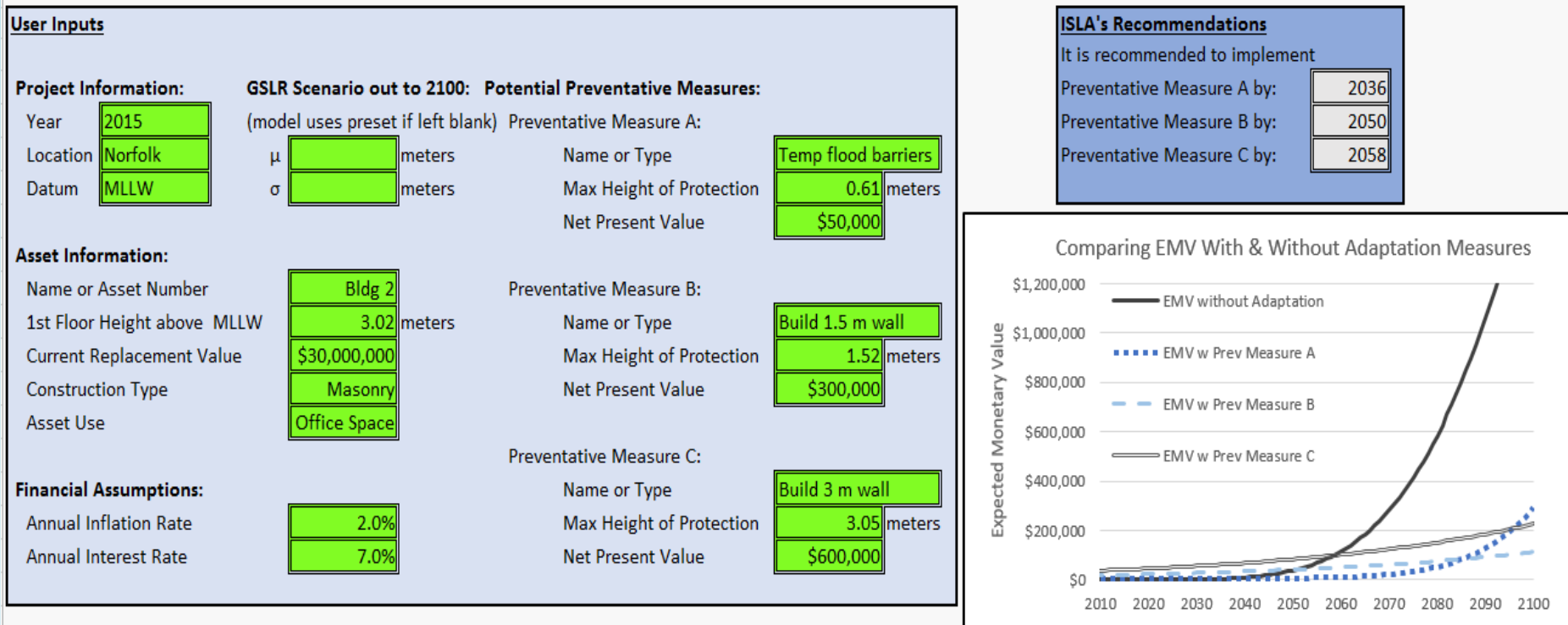


What to do with this info?



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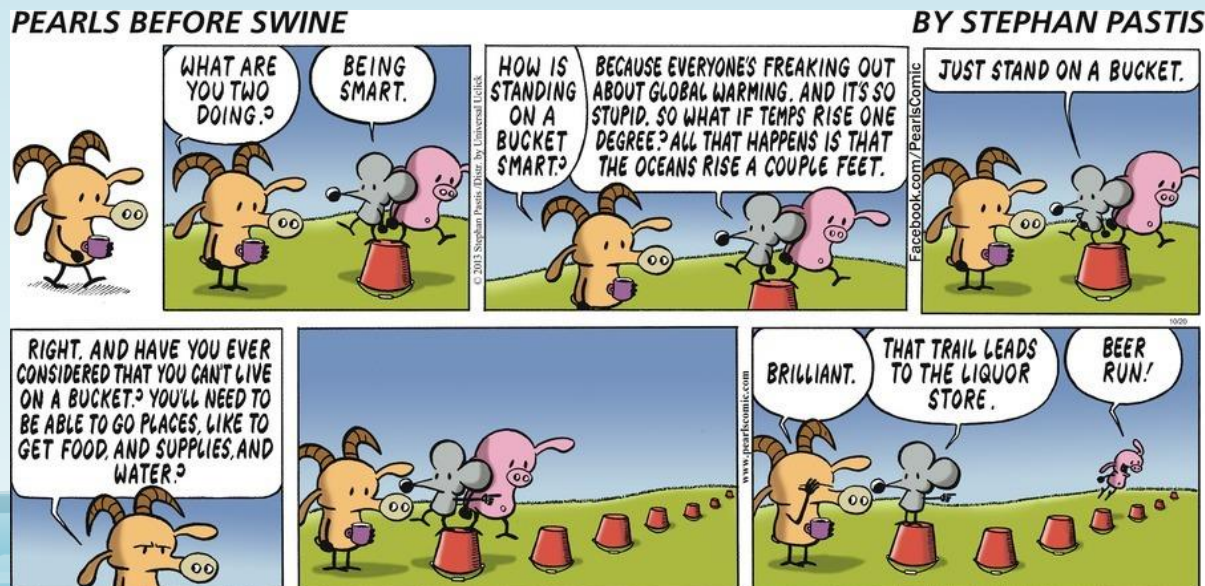
Implementing Sea Level Adaptation (ISLA) Tool



- Inputs to ISLA: Sea Level Rise Scenarios, Property Location, Building Construction and Use, Proposed Adaptations
- Outputs from ISLA: **WHAT** To Do. **WHEN** To Do It.

Summary

- ISLA uses current or forecast sea level rise trends
- Economic estimate of flood damage costs
- Comparative analysis of adaptation options
- Decision tool for WHAT to do and WHEN to do it



Questions?

Angela Schedel, PhD, PE

Director of Community Resiliency



TAYLOR ENGINEERING, INC.

aschedel@taylorengeering.com

References

2006 U.S. Army Corps of Engineers. “Depth-Damage Relationships for Structures, Contents and Vehicles and Content-To-Structure Value Ratios (CSVVR) in Support of the Donaldsville to the Gulf, Louisiana Feasibility Study.”

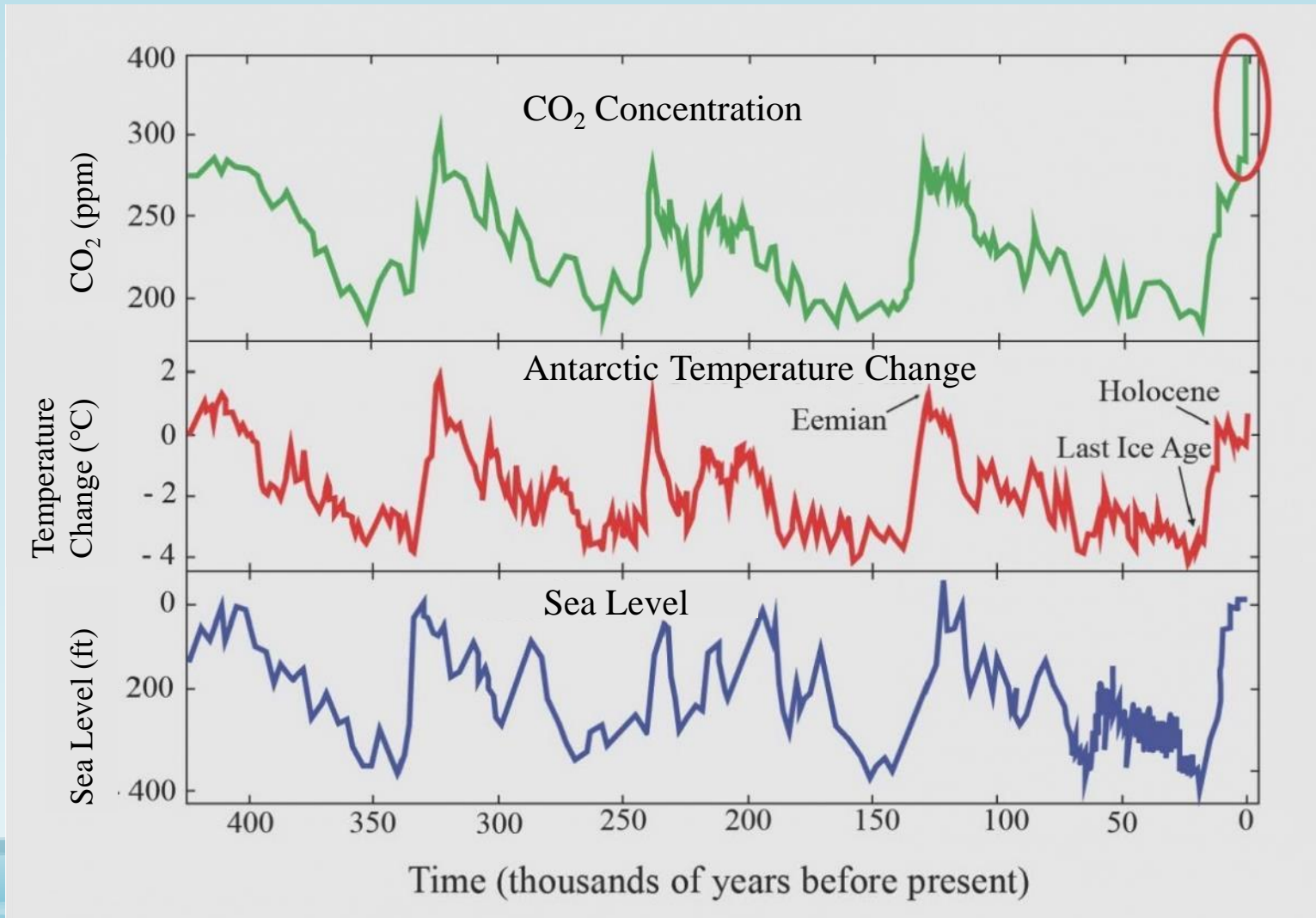
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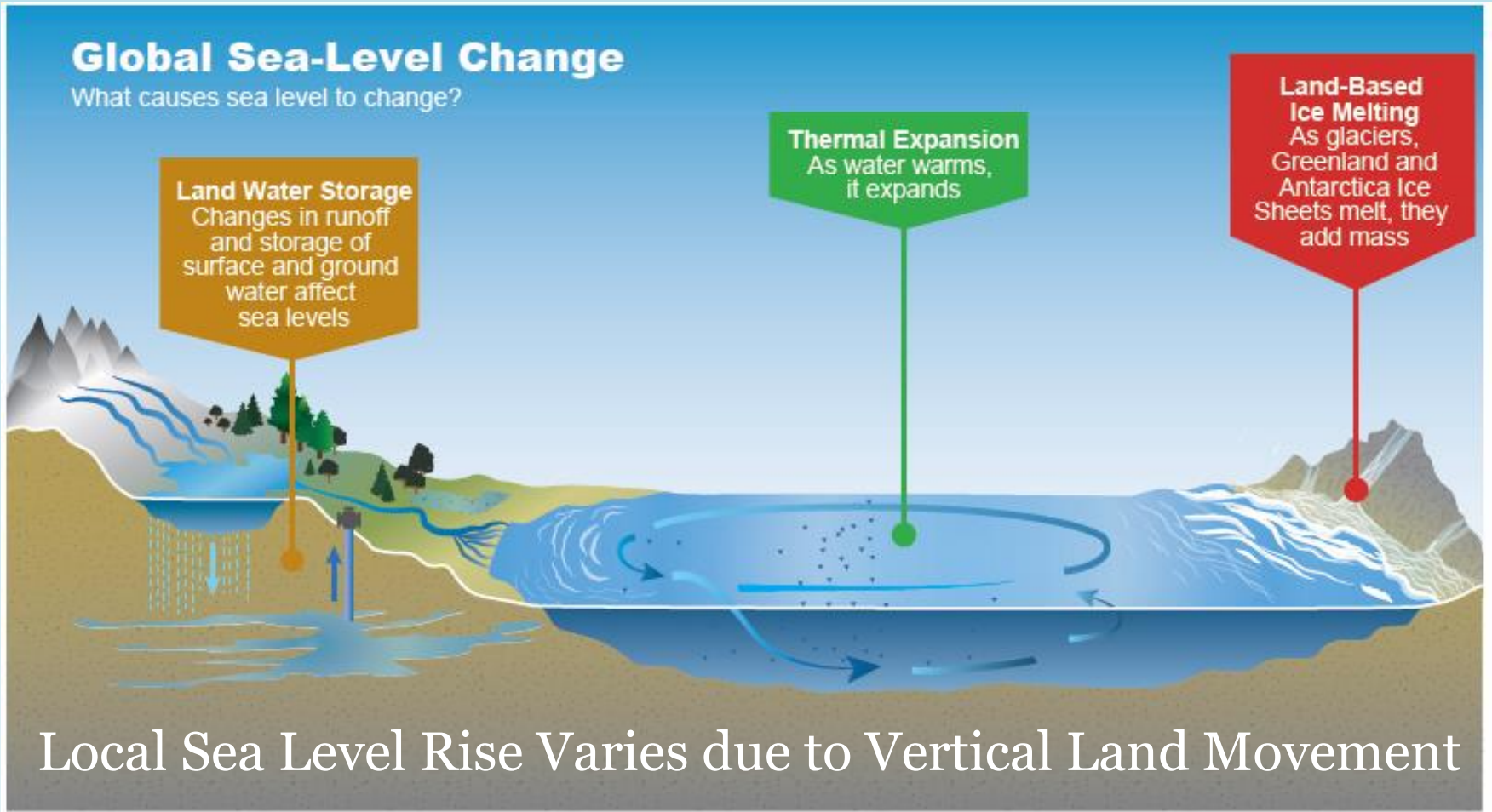
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How Much More Will Sea Level Rise?



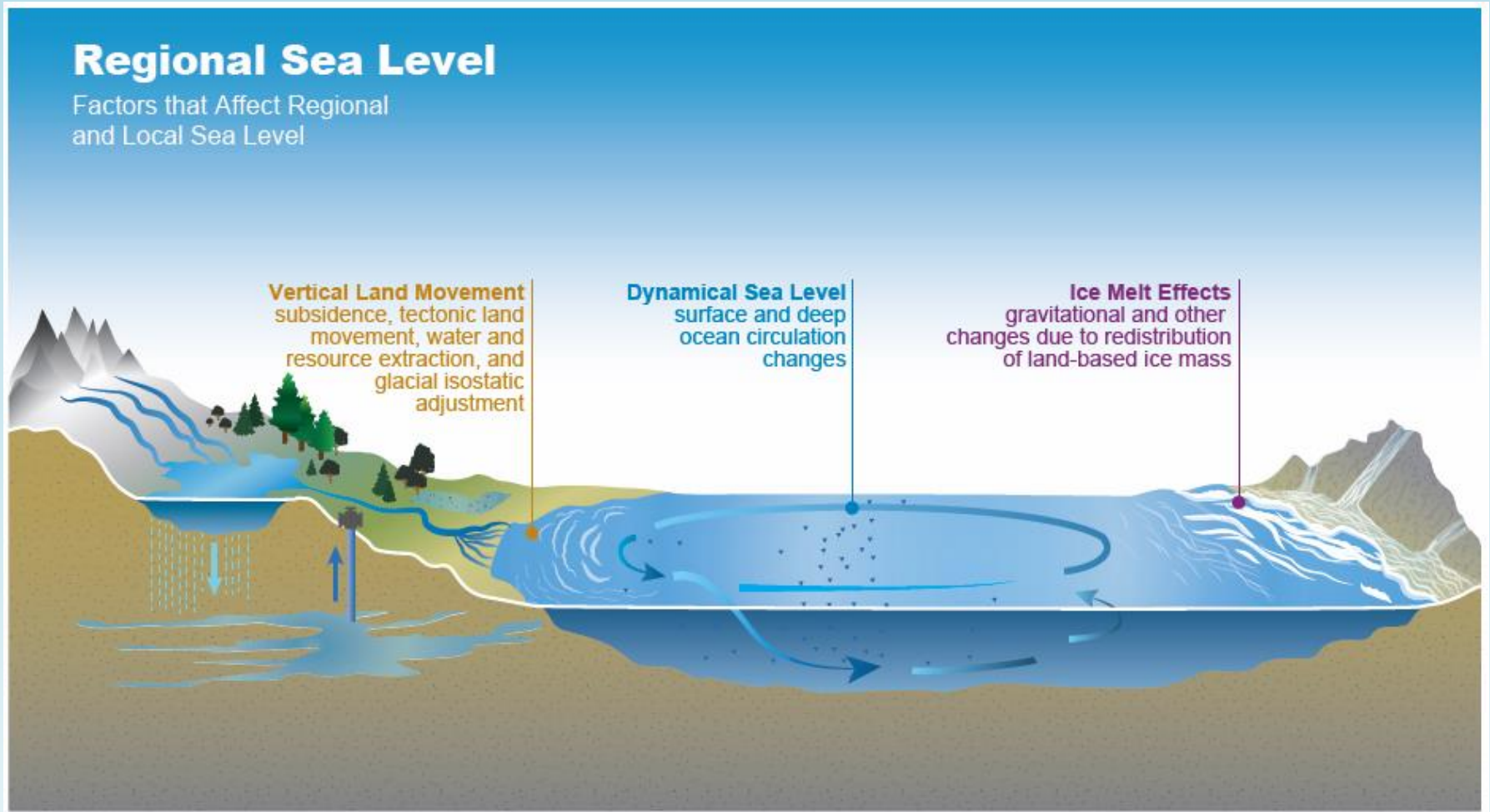
Source: Adapted from Hansen et al. (2008)

How Much More Will Sea Level Rise?



Source: Hall et al. (2016), IPCC AR5 (2013)

Causes of Local Sea Level Rise vs. Global Sea Level Rise Trend



Source: Hall et al. (2016), IPCC AR5 (2013)